

CLAIMS

1. A composition comprising superfine particles of a component selected from the group consisting of β -glucan and a component derived from a mushroom.

2. The composition according to claim 1, wherein said component is a component
5 derived from a mushroom.

3. The composition according to claim 2, wherein the component derived from a mushroom is an extract of a mushroom.

4. The composition according to claim 3, wherein the extract of a mushroom is a water extract of a mushroom.

10 5. The composition according to claim 2, wherein the component derived from a mushroom is β -glucan or contains β -glucan.

6. The composition according to claim 1, wherein said component is β -glucan.

7. The composition according to claim 6, wherein the β -glucan is obtained from a source other than a mushroom.

15 8. The composition according to claim 7, wherein said source is selected from the group consisting of a yeast, a fungi, a bacterium, and a plant.

9. The composition according to claim 1, wherein the component forms aggregates in an aqueous solution.

10. The composition according to claim 9, wherein the aggregates have a particle
20 diameter of at least 50 μm .

11. The composition according to claim 1, wherein the superfine particles have an average particle diameter of 10 μm or less, as determined in the form of a dispersion in water.

12. The composition according to claim 11, wherein the superfine particles have an average particle diameter of 1 μm or less.

13. The composition according to claim 11, wherein the superfine particles have an average particle diameter of 0.01 to 1 μm .

14. The composition according to claim 1, wherein the superfine particles have an average particle diameter of 10 μm or less and wherein the superfine particles are obtained by
5 mixing a dispersant with an aqueous solution containing a component selected from the group consisting of β -glucan and a component derived from a mushroom.

15. The composition according to claim 14, wherein the superfine particles have an average particle diameter of 1 μm or less and wherein the superfine particles are obtained by further fine pulverizing treatment.

10 16. The composition according to claim 14, wherein the aqueous solution contains an extract of a mushroom obtained by filtering a water extract of a mushroom or a hot-water extract of a mushroom.

17. The composition according to claim 16, wherein the extract contains aggregates obtained by filtering a water extract of a mushroom or a hot-water extract of a mushroom and
15 then concentrating and/or cooling the filtrate.

18. The composition according to claim 14, wherein the aqueous solution comprises β -glucan.

19. The composition according to claim 14, wherein the dispersant is an emulsifier.

20. The composition according to claim 19, wherein the emulsifier is lecithin.

20 21. The composition according to claim 1, further comprising a dispersant.

22. The composition according to claim 21, wherein the dispersant is mixed with an aqueous solution containing a component selected from the group consisting of β -glucan and a component derived from a mushroom such that the ratio by weight of the dispersant to the whole sugar (1) contained in the aqueous solution is 100 at most.

25 23. The composition according to claim 21, wherein the dispersant is an emulsifier.

24. The composition according to claim 23, wherein the emulsifier is lecithin.

25. The composition according to claim 1, wherein the superfine particles are in the form of micelles.

26. The composition according to claim 1, further comprising a pharmaceutically acceptable carrier or excipient.

27. An immune activator or an immune regulator comprising the composition described in claim 1.

28. An agent selected from the group consisting of an antitumor agent, an anti-infective agent, an antiviral agent, an anti-autoimmune disease agent, an anti-diabetes agent, an anti-allergy agent, an a pharmaceutical preparation for digestive organ diseases, a therapeutic agent for irritable bowel syndrome, a therapeutic agent for inflammatory bowel disease, a therapeutic agent for constipation, and a therapeutic agent for diarrhea, wherein said agent comprises the composition described in claim 1.

29. A food or drink comprising the composition described in claim 1.

30. The food or drink according to claim 29, which comprises the superfine particles of the composition are in an amount of 0.01 to 80% by weight based on the whole sugar.

31. A superfine particle-containing composition comprising an aqueous solution of the composition described in claim 1 dispersed therein.

32. A pharmaceutical composition comprising the superfine particle-containing composition described in claim 31 and further comprising a pharmaceutically acceptable carrier or excipient.

33. A food or drink comprising the superfine particle-containing composition described in claim 31.

34. The food or drink according to claim 33, which comprises the superfine particle-containing composition in an amount of 0.05 to 5% by weight based on the whole sugar.

35. The superfine particle-containing composition according to claim 31, which comprises 1 to 20000 mg sugar and 1 to 20000 mg dispersant every 100 g of the composition.

36. A process for producing superfine particles comprising superfine pulverizing a component selected from the group consisting of β -glucan and a component derived from a mushroom.

37. The process according to claim 36, wherein the component derived from a mushroom is an aqueous extract obtained in a step of extraction from a mushroom with water.

38. The process according to claim 36, wherein said superfine pulverizing includes preparing particles having an average particle diameter of 10 μm or less by mixing a dispersant with an aqueous solution containing a component selected from the group consisting of β -glucan and a component derived from a mushroom.

39. The process according to claim 38, wherein the aqueous solution contains an extract of a mushroom obtained by filtering a water extract of a mushroom or hot-water extract of a mushroom.

40. The process according to claim 36, wherein said superfine pulverizing includes preparing particles having an average particle diameter of 1 μm or less.

41. The process according to claim 40, wherein said preparing particles having an average particle diameter of 1 μm or less comprising treating the particles with a high-pressure emulsifier.

42. A process for producing a composition containing superfine particles comprising superfine pulverizing a component selected from the group consisting of β -glucan and a component derived from a mushroom.

43. The process according to claim 42, wherein said superfine pulverizing includes preparing particles having an average particle diameter of 10 μm or less by mixing a dispersant with an aqueous solution containing a component selected from the group consisting of β -glucan and a component derived from a mushroom.

5 44. The process according to claim 43, wherein the aqueous solution contains an extract of a mushroom obtained by filtering a water extract of a mushroom or hot-water extract of a mushroom.

45. The process according to claim 42, wherein said superfine pulverizing includes preparing particles having an average particle diameter of 1 μm or less.

10 46. The process according to claim 45, wherein said preparing particles having an average particle diameter of 1 μm or less comprising treating the particles with a high-pressure emulsifier.

47. The process according to claim 43, wherein the component derived from a mushroom is an aqueous extract obtained in a step of extraction from a mushroom with
15 water.

48. A method of activating or regulating immunity comprising administering to a subject in need thereof a composition described in claim 1.

49. The method according to claim 48, wherein the subject in need thereof has a condition selected from the group consisting of a tumor, an infection, a viral infection, an
20 autoimmune disease, diabetes, an allergy, a digestive organ disease, irritable bowel syndrome, inflammatory bowel disease, constipation, and diarrhea.

50. The method according to claim 48, wherein the composition further comprises a pharmaceutically acceptable carrier or excipient.

51. The method according to claim 48, wherein the composition is admixed with a
25 food and drink prior to administration to said subject in need thereof.